

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 6-8, 14-16 and 19-20 are pending in the present application. Claim 8 is amended; and Claims 19-20 are added by the present amendment. Support for the new and amended claims can be found in the original specification, claims and drawings. No new matter is presented.

In the Office Action, Claims 8 and 16 are rejected under 35 U.S.C. § 103(a) as unpatentable over Takahashi (U.S. Pat. 6,044,341) in view of Johns IV et al. (U.S. Pat. 6,657,950, herein Johns IV); and Claims 6, 7, 14 and 15 are allowed. Applicant appreciatively acknowledges the indication of allowable subject matter.

The Office Action rejects Claims 8 and 16 under 35 U.S.C. § 103(a) as unpatentable over Takahashi in view of Johns IV. Applicant respectfully traverses this rejection, as independent Claims 8 and 16 recite novel features clearly not taught or rendered obvious by the applied references.

Independent Claim 8, for example, recites a transmitting device that processes radio transmitted signals, comprising:

a frequency conversion means for converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic;

a spectrum characteristic processing means for changing an amplitude of the frequency signal while retaining phase information of the frequency signal;

means for reconvert the frequency signal having the spectrum characteristic processing applied into a time sequence signal; and

a pre-amble pattern storage means for storing ***the signal reconverted into the time sequence signal as a pre-amble signal for attaining synchronization at a receiver***, wherein the pre-amble signal read from the pre-amble pattern storage means is transmitted together with a transmitted data body.

As clarified in amended independent Claim 8, *the* signal reconverted into the time sequence signal, which has been processed by the frequency conversion means, spectrum characteristic processing means and reconverting means, is stored in the pre-amble pattern storage means *as a pre-amble signal for attaining synchronization at a receiver*.

In contrast, neither Takahashi nor Johns teach or suggest performing the signal processing steps recited in independent Claim 8, and storing the resultant “*signal reconverted into the time sequence signal as a pre-amble signal for attaining synchronization at a receiver*”, as claimed.

Takahashi, the primary reference, describes a noise suppression apparatus for performing noise removal from a voice signal. In rejecting the features of Claim 8, the Office Action relies on various portions of the noise suppressor 5 shown in Fig. 4 of Takahashi. As described at col. 7, l. 38 – col. 8, l. 11 of Takahashi, the processing performed on the input signal is for purposes of suppressing noise in a voice signal only, and is not related to processing a pre-amble signal to more closely resemble a transmitted OFDM signal, as described, for example, at p. 10 of the specification.

Further, p. 3 of the Office Action concedes that Takahashi fails to “teach transmits a signal reconverted into the time sequence signal together with a data body as a pre-able signal for attaining synchronization on the receiving side.” In an attempt to remedy this deficiency, the Office Action relies on the block 304 labeled “Add Cyclic Prefix” in Fig. 3 of Johns IV. As described at col. 4, ll. 40-48, however, this cited portion of Johns IV appears to merely describe adding a cyclic prefix to a transmitted OFDM signal, but fails to teach or suggest that the prefix is created and stored, as recited in independent Claim 8.

Therefore, Takahashi, even if combined with Johns IV, fails to teach or suggest “converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic”, “changing an amplitude of the

frequency signal while retaining phase information of the frequency signal”, “reconverting the frequency signal having the spectrum characteristic processing applied into a time sequence signal”, and “storing ***the signal reconverted into the time sequence signal as a pre-amble signal for attaining synchronization at a receiver***, wherein the pre-amble signal read from the pre-amble pattern storage means is transmitted together with a transmitted data body”, as recited in independent Claim 8.

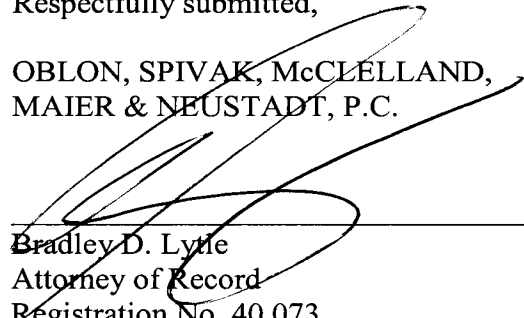
Accordingly, Applicant respectfully requests that the rejection of Claim 8 under 35 U.S.C. § 103 be withdrawn. For substantially similar reasons, it is also submitted that independent Claim 16 patentably defines over Takahashi and Johns IV.

Further, new Claims 19 and 20 are added, which depend from independent Claims 8 and 16, respectively, and recite that changing the spectrum includes “setting a spectrum amplitude of the original time sequence signal to a specific value at a center frequency band and end frequency bands of a frequency domain in use, and smoothing the spectrum amplitude at the other frequency bands, in a manner that the spectrum amplitude of the original time sequence signal becomes equal to that of a general OFDM signal while retaining phase information of the original time sequence signal.” Takahashi and Johns IV fail to teach or suggest this claimed feature. Further, Claims 19 and 20 are patentable at least by virtue of their dependency from Claims 8 and 16.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 6-8, 14-16 and 19-20 is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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